#### Supporting information. Model results for GLMs testing the relationship between the log(HRI) and different biomass and energy measurements of for white shrimp at each scale tested. Statistically significant (p < 0.05) model results in bold. T = *t*-value

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Size | | Abundance | | Biomass | | Calories/g | | Total calories | |
| Size | T | P value | T | P value | T | P value | T | P value | T | P value |
| 50 | 1 | 0.317 | 0.3 | 0.780 | **2.7** | **0.009** | 0.3 | 0.733 | **2.6** | **0.013** |
| 75 | 1.5 | 0.132 | 1.2 | 0.219 | **2.6** | **0.012** | 0.6 | 0.545 | **2.3** | **0.024** |
| 100 | **1.8** | **0.078** | 1.4 | 0.158 | **2.2** | **0.031** | 1.1 | 0.292 | **2** | **0.049** |
| 150 | **4.1** | **0.000** | **2.4** | **0.019** | **4.5** | **0.000** | 0.5 | 0.627 | **4.3** | **0.000** |
| 200 | **4.8** | **0.000** | **2.5** | **0.018** | **5.4** | **0.000** | 0.6 | 0.555 | **5.1** | **0.000** |
| 250 | **4.2** | **0.000** | **2** | **0.049** | **5** | **0.000** | 0.8 | 0.413 | **4.9** | **0.000** |
| 300 | **3.2** | **0.003** | 1.6 | 0.126 | **4.1** | **0.000** | 1 | 0.324 | **4** | **0.000** |
| 400 | **2.8** | **0.007** | 1.2 | 0.232 | **3.8** | **0.001** | 0.8 | 0.408 | **3.7** | **0.001** |
| 500 | **3** | **0.005** | 0.9 | 0.382 | **3.8** | **0.000** | 0.9 | 0.389 | **3.8** | **0.001** |
| 750 | **2.4** | **0.020** | 0 | 0.995 | **3** | **0.004** | 0.8 | 0.453 | **2.9** | **0.006** |
| 1000 | 2 | 0.054 | -0.8 | 0.416 | **2.2** | **0.037** | 1.1 | 0.267 | **2.1** | **0.046** |
| 1500 | 1.2 | 0.225 | -1.1 | 0.277 | 1 | 0.302 | 1.4 | 0.154 | 1 | 0.303 |